

ABSTRACT

A valve actuating apparatus for providing proportional control of a fluid flow that includes a housing having a valve body with an inlet port and an outlet port. In one embodiment, the valve actuating apparatus also has a valve assembly including an armature, a movable fluid control member, and at least one spring biasing the armature into contact with the fluid control member. The valve actuating apparatus further includes a solenoid assembly having an electromagnetic coil and a pole piece. The pole piece and the armature define a gap that changes proportionally with the amount of current flowing through the electromagnetic coil. Fluid flow from the inlet port to the outlet port may proportionally increase or decrease as the gap increases or decreases. The valve actuating apparatus may further include a valve seat. The fluid control member may be in contact with the valve seat to inhibit fluid flow through the apparatus when the electromagnetic coil is not energized.